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HQP-1072 Series System User Guide

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HQP-1072 Hardware User Guide

Thank you for choosing our HQP-1072 series system!

The HQP-1072 is a full tested 1U server computer which installs SDI/HD-SDI interface card and HQP-series applications for TV broadcasting. Different modules are provided, depending on interface card and application installed.

HQP-1072SD：SD (NTSC/PAL) TV Broadcast Playout

- Operation System：Microsoft Windows 7 pro 64-bit
- Software：HQP-Bplayer 2.0
- Doungle：HQP-Bplayer SD
- BMD Decklink Dual module：1 full SD channel

HQP-1072HS：HD/SD Simulcast TV Broadcast Playout

- Operation System：Microsoft Windows 7 pro 64-bit
- Software：HQP-Bplayer 2.0
- Doungle：HQP-Bplayer HS
- BMD Decklink Dual module：1 full HD/SD channel

This user guide will help you to setup your HQP-1072 series system hardware step by step.

According to different application software installed, please check the software user manual corresponding to each application, that will teach you how to use our software.

HQP-1072 series system is a dedicated computer for TV broadcasting, and certain functions are disabled. Please do not execute any other software which is not relevant. Some customers may install two or more applications on the same system, please confirm with retailers of Ju-Soft CO., LTD whether they can be simultaneously executed.

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1. HQP-1072 system Introduction

1.1 Box Contents

Each HQP-1072 System has a complete burn-in test before delivery. Hard drives are preinstalled in the server；please check if they are present and undamaged once you open the package.

Open the box and ensure the listed items are present. If not, please contact your retailer immediately.

1. HQP-1072 System 1U rack-mount server *1, with installation serial number of Windows-7 on the chassis cover.

2. One 2.5” SSD 60GB (SLC) system hard drive is pre-installed in the chassis.

3. Two 2.5” SATA 1GB data hard drives are pre-installed in the chassis.

4. CDs and Documents
   - HQP-1072 System packing list
   - Windows-7 installation disc
   - HQP-1072 System installation disc
   - HQP-1072 System restore disc

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- Motherboard driver disc
- HQP-1072 System warranty document
- User Guide

5. Accessories
   - US type power cord *1
   - EU type power cord *1

Layer 1：Cover Layer

Layer 2： HQP-1072 & Power Cord

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1.2 Specification

Chassis 1U, 19" Rack-mount

Dimension

Height	1.7 " (43mm)
Width	17.2 " (437mm)
Depth	9.8 " (254mm)
Weight	4.5kg

Front Panel

Buttons	Power On/Off button
	System Reset button
LED	Power LED
	Hard drive activity LED
	2 x Network activity LED
	System Overheat LED

Motherboard

Super X9SPV-LN4F-3QE

CPU

Intel® Core(TM) i7-3612QE CPU @ 2.10GHz 2.10GHz

Memory

16GB DDR3 1333 ECC

Hard Drives

1 x 2.5” SSD (SLC) hard drive
2 x 2.5" SATA2 hard drives with RAID 1

Expansion Slots

1 x PCI-E 3.0 x16 slot

System Cooling

2 x 40X28MM 4-PIN PWM FAN, 8500 rpm

Power Supply

200W High-Efficiency Power Supply with PFC
AC Voltage 100-240V, 50-60Hz, 2.6 Amp Max

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Chipset

Intel® QM77 Chipset

Networking

4 x RJ45 LAN ports
1 x RJ45 Dedicated IPMI LAN port

Graphic

Intel Integrated Graphics HD 4000

On-Board Input/Output

5 x RJ45 ports (include 1 Dedicated IPMI LAN port)
4 x USB 2.0 ports (4 x rear)
1 x VGA port
1 x COM ports (1 x rear)

Operating System

Windows 7 Professional 64bit

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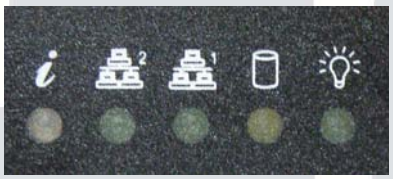
1.3 Appearance

HQP-1072 Series Front View：

1. Control Panel LEDs

The control panel located on the front of the chassis has five LEDs. These LEDs provide you with critical information related to different parts of the system.



Overheat/Fan Fail

Status	Description
Continuously on and red	An overheat condition has occurred. (This maybe cause by cable congestion.)
Blinking red (1Hz)	Fan failure, check for an inoperative fan.
Blinking red (0.25Hz)	Power failure, check for an non-operational power supply.
Solid blue	Local UID has been activated. Use this function to locate the server in a rack mount environment.
Blinking blue (300 m/s)	Remote UID is on. Use this function to identify the server from a remote location.

NIC1

Indicates network activity on LAN1 when flashing.

NIC2

Indicates network activity on LAN2 when flashing.

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HDD

Channel activity for all hard drives. This light indicates hard drive activity on the system when flashing.

Power

Indicates power is being supplied to the system's power supply units.

This LED should normally be illuminated when the system is operating.

2. Control Panel Buttons

There are two push-buttons located on the front of the chassis: a reset button and a power on/off button.

Power Button

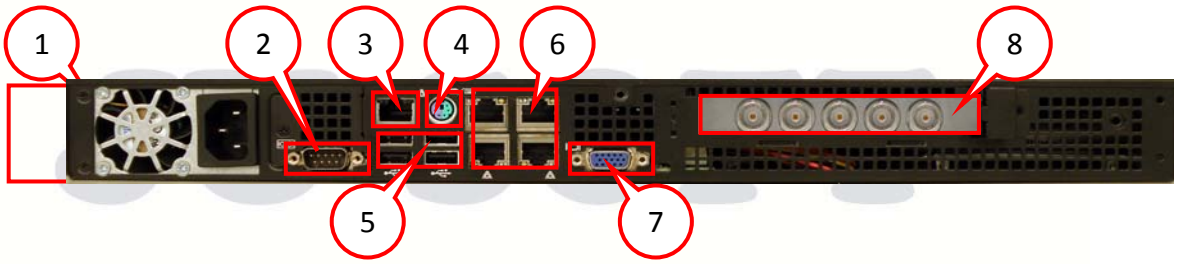
This is the main power button, which is used to apply or turn off the main system power.

Reset Button

The reset button reboots the system.

3. HQP Series Number
4. Mounting ears

HQP-1072 Series Rear View：



1. Power Supply
2. COM ports RS232 9-pin
3. LAN port with IPMI
4. PS2 port
5. USB ports * 4
6. LAN ports * 4
7. VGA port D-SUB 15-pin
8. BMD DeckLink dual card

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2. Setting Up

HQP-1072 System is a rack-mount server, installed on a 19" rack usually. For the first time, it's recommended to power on and test the server on the desk, and then assemble it into the rack after successfully booting the server. Follow the instructions to check weather it can be turned on and function normally.

2.1 Connect Power Cord

First, please take the applicable cord (US or Euro type) and connect it to the power supply connector.

2.2 Connect Monitor/Keyboard/Mouse

PS2 & USB interface are all supported by HQP-1072 Series System. Please connect your monitor/keyboard/mouse to the HQP-1072 Series System.

2.3 Power On the System

After the above mentioned peripheral devices are well connected, press the power button to turn on the server.

When pressing the power button, you will see the LED light flashing and hear the fan whirling. The fan spins at the highest speed on start-up, but the server will check the internal temperature later on and automatically lower fan speed when finding the unnecessity of high fan speed. Therefore, it is normal that the server works with noise at the beginning.

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Booting process of HQP-1072 Series System may takes around 30 seconds. Default login password of the Windows 7 system is “HQP”.

The screenshot will be like this after you log on Windows 7 system:

Now, you can follow the software manual to start the software test of the HQP-series software, see if the software can function normally.

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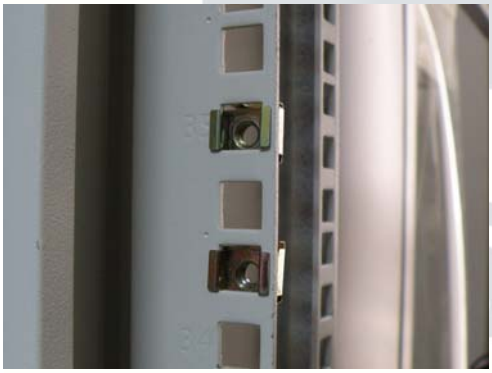
3. Installing the Server in a Rack

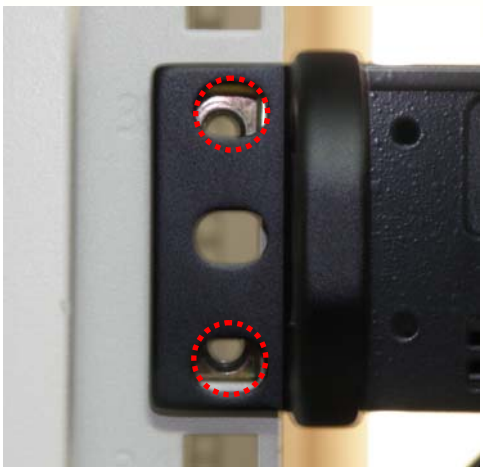
After the server has been testified, please follow the instructions to mount HQP-1072 system into a Rack to ensure the stability.

3.1 Installing the Server into the Rack

1. Confirm that chassis includes the four mounting screws required to mount the chassis into a rack.

2. Align the thru holes of the chassis with the thru holes of the rack.





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3. Insert the mounting screws into the thru holes in the front of the chassis and through the thru holes in the rack and secure.

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4. System Maintenance

HQP-1072 System is designed and tested under strict quality control for a long time before delivering to ensure product quality. However, the damages of components are irresistible since the computers are used continuously without shutting down. As the test results indicated, the hard drive, power supply unit and fans account for the most frequently damaged components. The steps to maintain these three items are therefore specifically described as below.

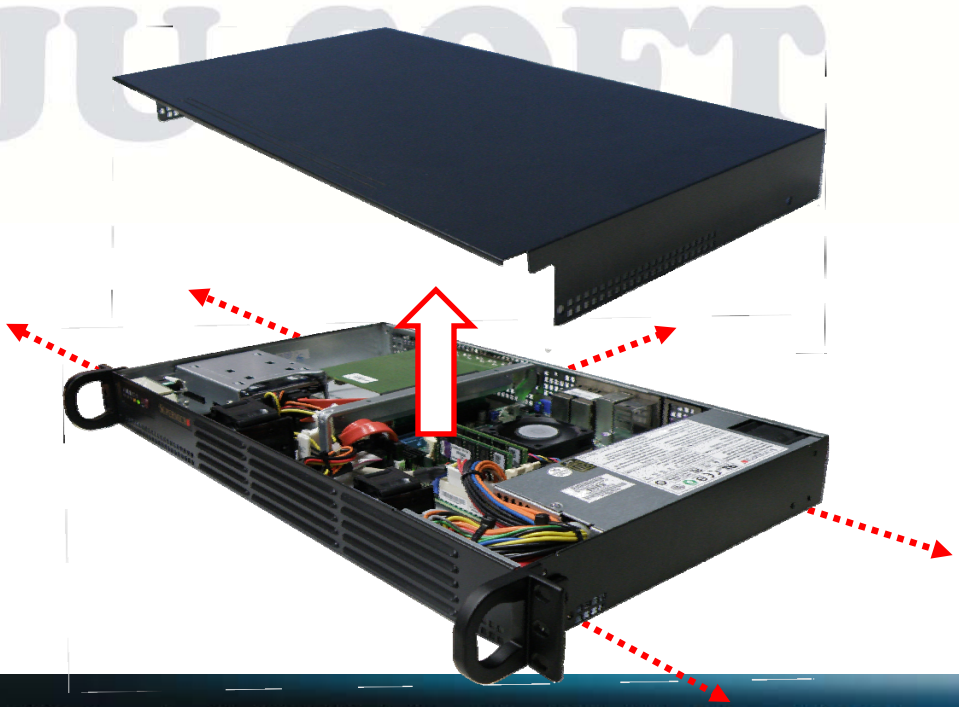
4.1 Replacing Hard Disk

4.1.1. System Hard Disk Failed

HQP-1072 has one SSD 60GB (SLC) system hard disk and two SATA 1TB data hard disks mirrored as a RAID1 disk array.

If the system hard disk failed, the system will unable to startup. In this case, please follow the instruction to replace the system hard drive and start the system restoration.

1. Release these 5 screws to remove the cover of the chassis. (Rear 1, Left 2, Right 2)



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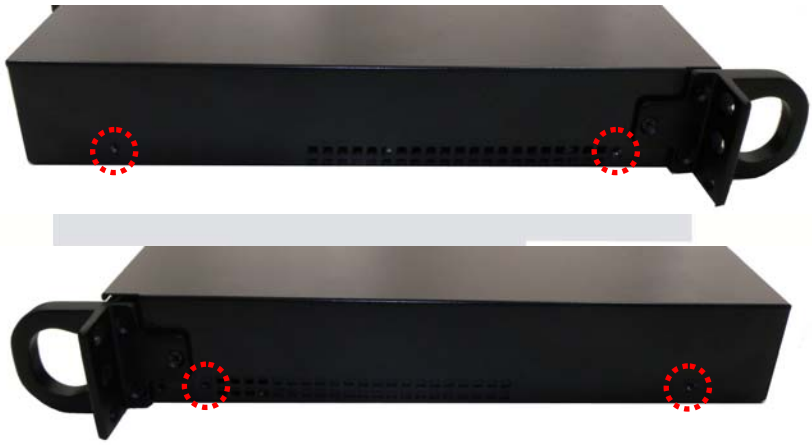
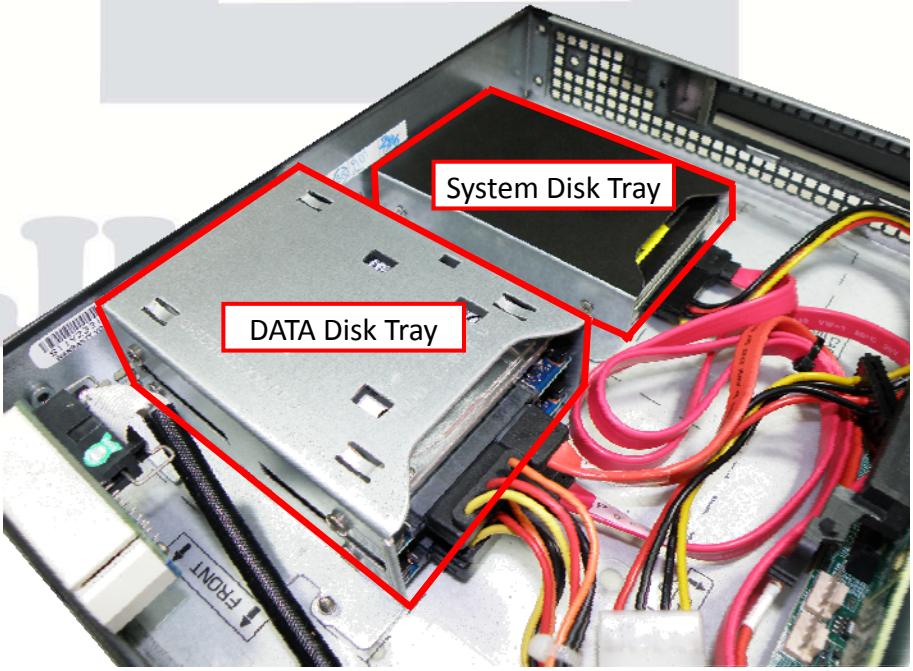


2. You will see there are 2 disk trays in the chassis, one for system disk and one for data disks.



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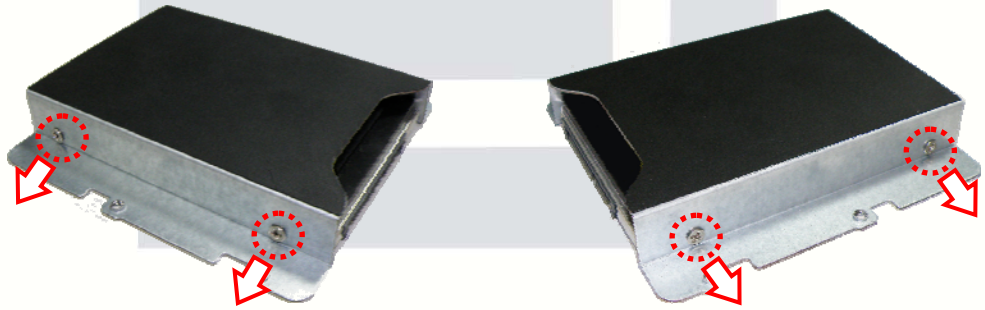
3. Release the 4 screws on the bottom of the chassis to unlock the system hard disk tray.

4. Release the 4 screws to unlock the abnormal system disk and replace it with a backup.



5. Screw the system hard disk tray back to the chassis and put the cover back. After replacing the abnormal system disk, we can start the system restoration.

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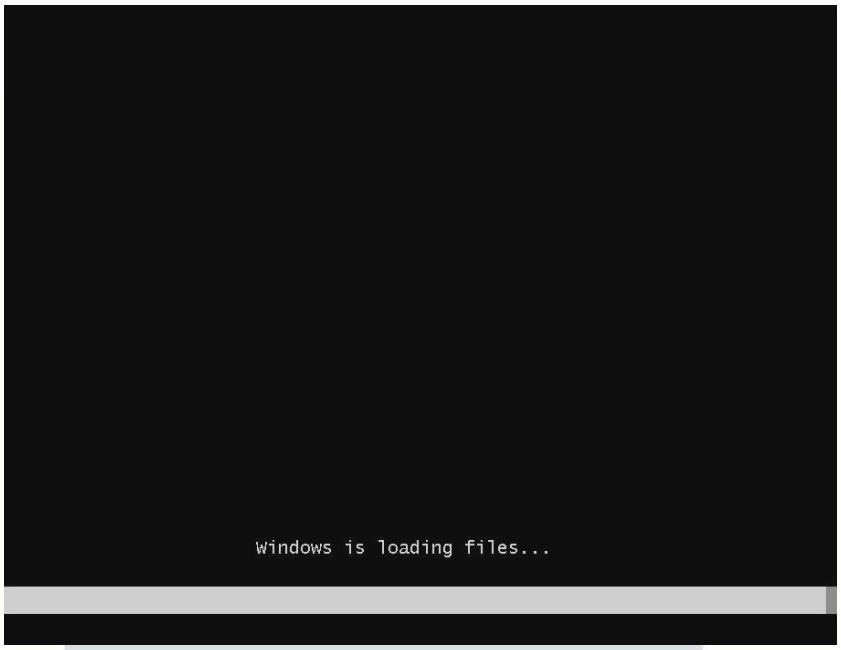
6. System restoration

Please prepare an external DVD-ROM drive and connect it to the HQP-1072 system. Insert the win7 installation disc then restart the system. Follow the step below to start the system restoration.

Windows will first start loading files needed for system restoration.



Please click Next to go to the next step.

Install Windows
Windows 7
Language to install: English
Time and currency format: English (United States)
Keyboard or input method: US
Enter your language and other preferences and click "Next" to continue.
Copyright © 2009 Microsoft Corporation. All rights reserved.
Next

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Please click Repair your computer.

When you see this page, please take out the Window7 installation disc and put the Restore CD disc 2/2 into the DVD-ROM drive. Select the option Restore your computer using a system image that you created earlier and click Next.

System Recovery Options
Use recovery tools that can help fix problems starting Windows.
Select an operating system to repair.
If your operating system isn't listed, click Load Drivers and then install drivers for your hard disks.
Operating System
Partition Size
Location
Restore your computer using a system image that you created earlier.
Load Drivers
Next >

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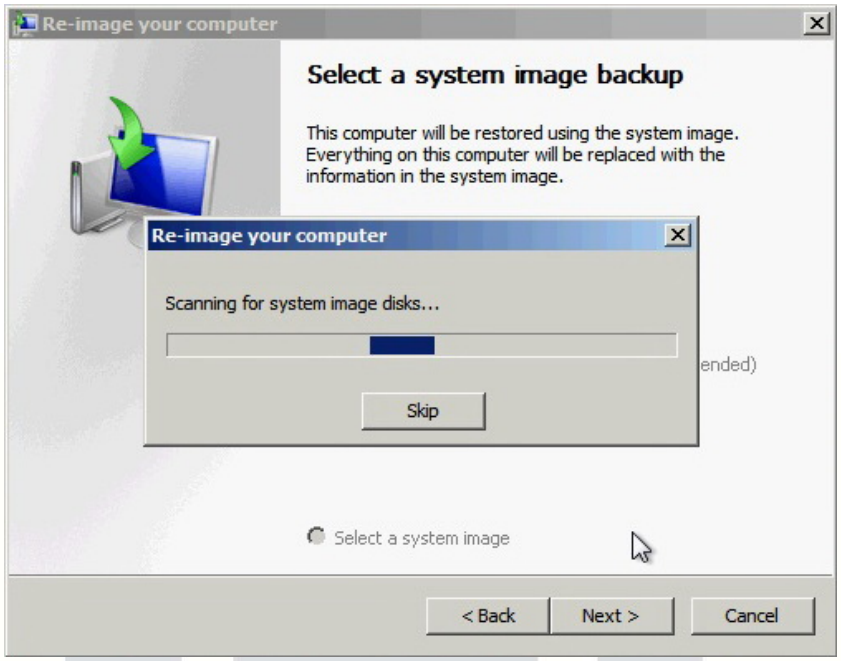
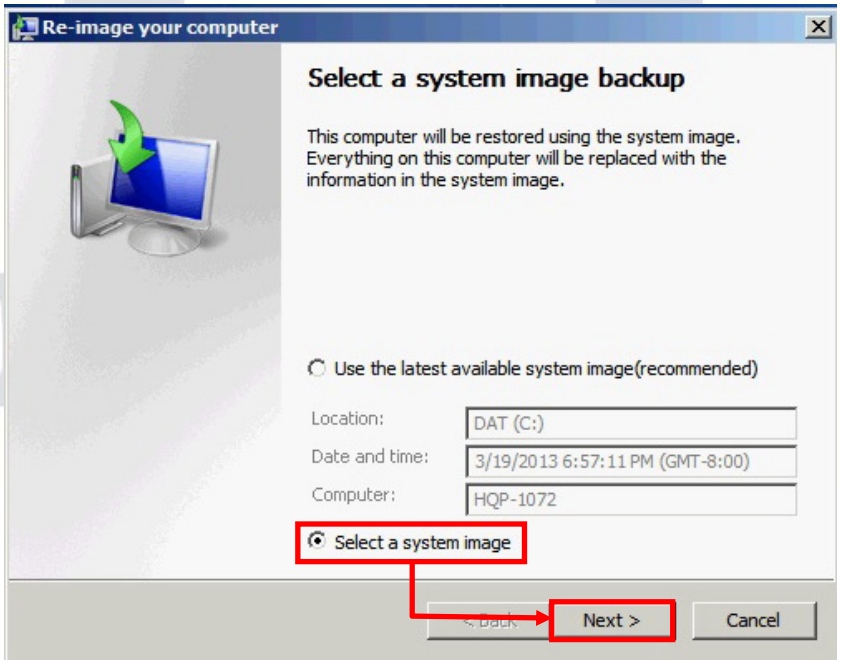
The system will start scanning for system image backup.


Re-image your computer
Select a system image backup
This computer will be restored using the system image. Everything on this computer will be replaced with the information in the system image.
Re-image your computer
Scanning for system image disks...
Skip
ended)
Select a system image
< Back
Next >
Cancel

In this page, please select the option Select a system image and click Next.


Re-image your computer
Select a system image backup
This computer will be restored using the system image. Everything on this computer will be replaced with the information in the system image.
Use the latest available system image(recommended)
Location:
DAT (C:)
Date and time:
3/19/2013 6:57:11 PM (GMT-8:00)
Computer:
HQP-1072
Select a system image
Next >
Cancel

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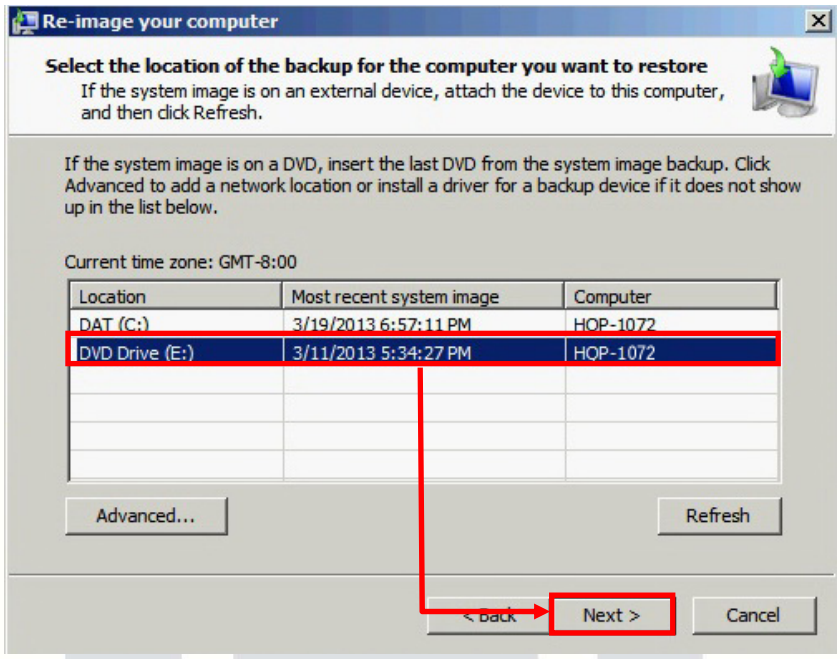
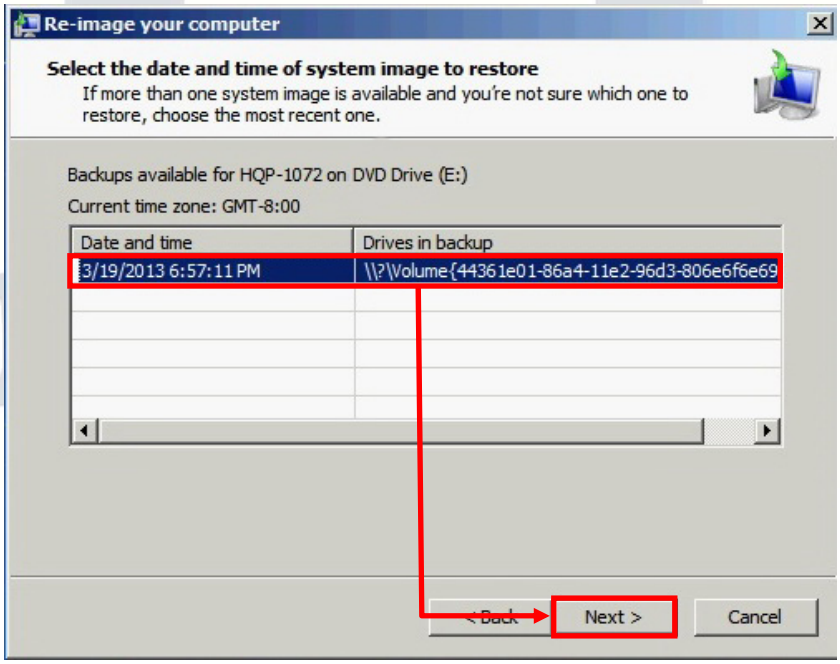
Please choose the system image in the DVD-ROM drive and click Next.


Re-image your computer
Select the location of the backup for the computer you want to restore
If the system image is on an external device, attach the device to this computer, and then click Refresh.
If the system image is on a DVD, insert the last DVD from the system image backup. Click Advanced to add a network location or install a driver for a backup device if it does not show up in the list below.
Current time zone: GMT-8:00
Location
Most recent system image
Computer
DAT (C:)
3/19/2013 6:57:11 PM
HQP-1072
DVD Drive (E:)
3/11/2013 5:34:27 PM
HQP-1072
Advanced...
Refresh
< Back
Next >
Cancel

Select the date and time of system image and click Next.


Re-image your computer
Select the date and time of system image to restore
If more than one system image is available and you're not sure which one to restore, choose the most recent one.
Backups available for HQP-1072 on DVD Drive (E:)
Current time zone: GMT-8:00
Date and time
Drives in backup
3/19/2013 6:57:11 PM
\\?\Volume{44361e01-86a4-11e2-96d3-806e6f6e69
< Back
Next >
Cancel

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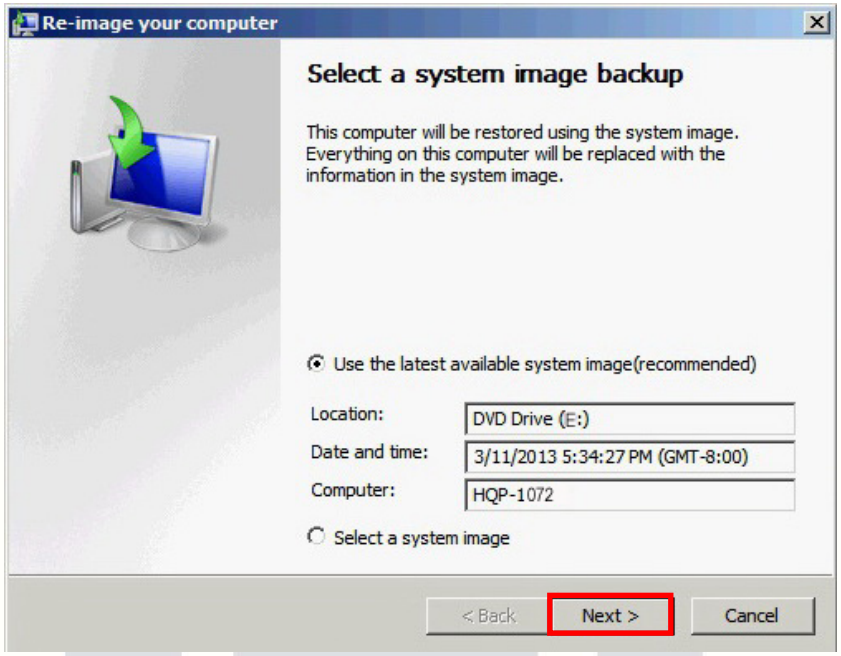
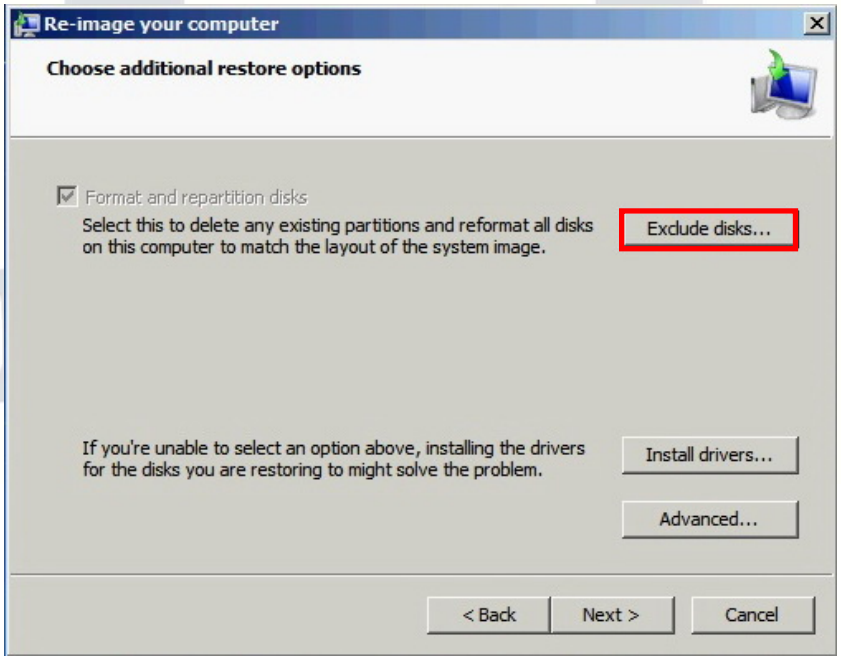
Please press Next to go to next step.


Re-image your computer
Select a system image backup
This computer will be restored using the system image. Everything on this computer will be replaced with the information in the system image.
Use the latest available system image(recommended)
Location:
DVD Drive (E:)
Date and time:
3/11/2013 5:34:27 PM (GMT-8:00)
Computer:
HQP-1072
Select a system image
< Back
Next >
Cancel

In this page, please click Exclude disks to exclude the data disks from restoring.


Re-image your computer
Choose additional restore options
Format and repartition disks
Select this to delete any existing partitions and reformat all disks on this computer to match the layout of the system image.
Exclude disks...
If you're unable to select an option above, installing the drivers for the disks you are restoring to might solve the problem.
Install drivers...
Advanced...
< Back
Next >
Cancel

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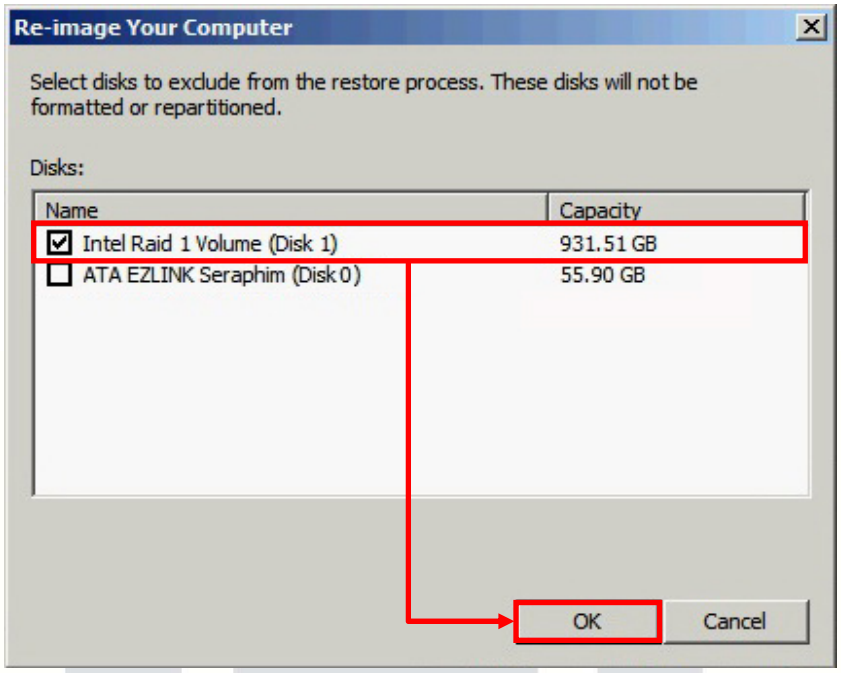
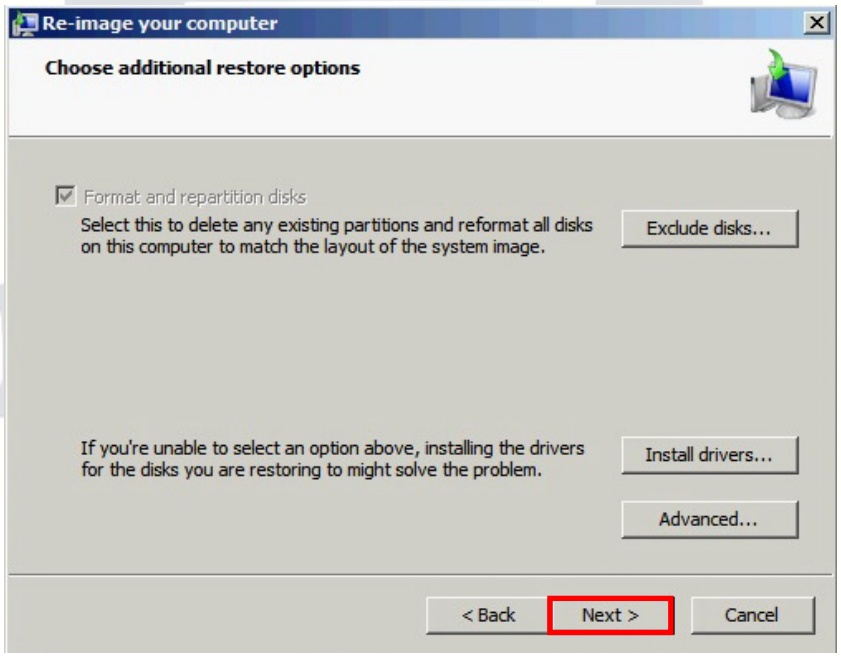
Please select Intel Raid 1 Volume (Disk 1) and press OK.



Press Next.


Re-image your computer
Choose additional restore options
Format and repartition disks
Select this to delete any existing partitions and reformat all disks on this computer to match the layout of the system image.
Exclude disks...
If you're unable to select an option above, installing the drivers for the disks you are restoring to might solve the problem.
Install drivers...
Advanced...
< Back
Next >
Cancel

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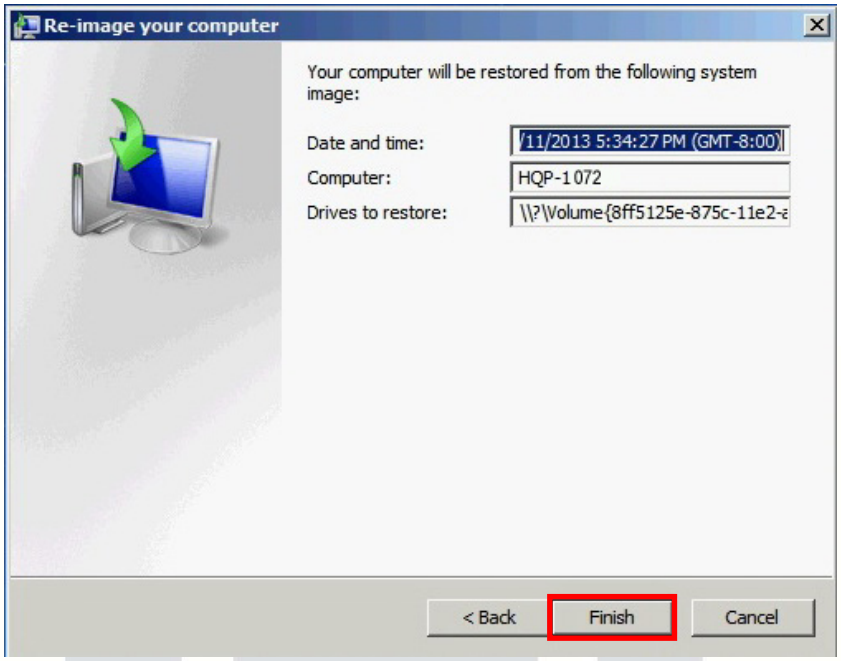
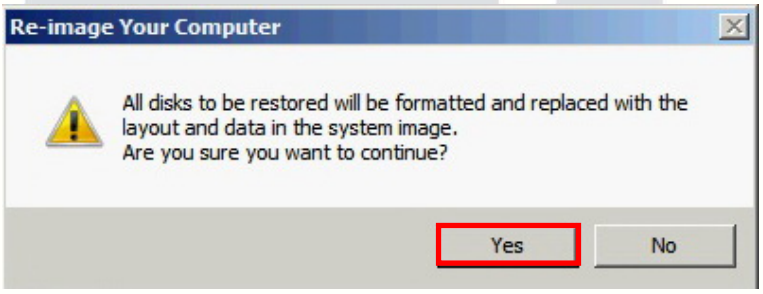
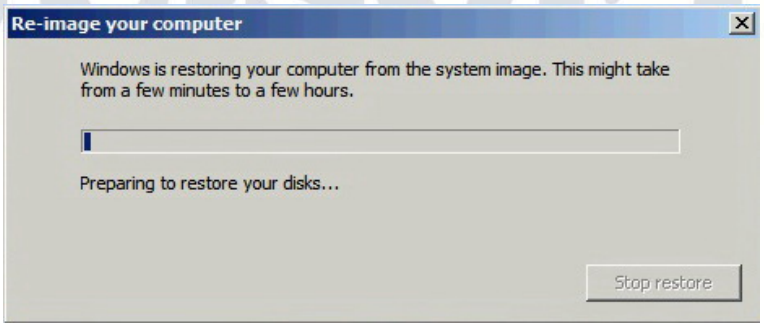
Press Finish.



To restore your system for a system image backup, please press Yes.


Re-image Your Computer
All disks to be restored will be formatted and replaced with the layout and data in the system image.
Are you sure you want to continue?
Yes
No

Windows start to restore the system disk from the system image backup.


Re-image your computer
Windows is restoring your computer from the system image. This might take from a few minutes to a few hours.
Preparing to restore your disks...
Stop restore

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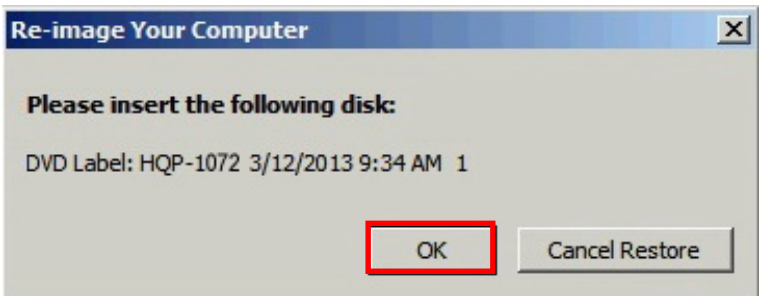
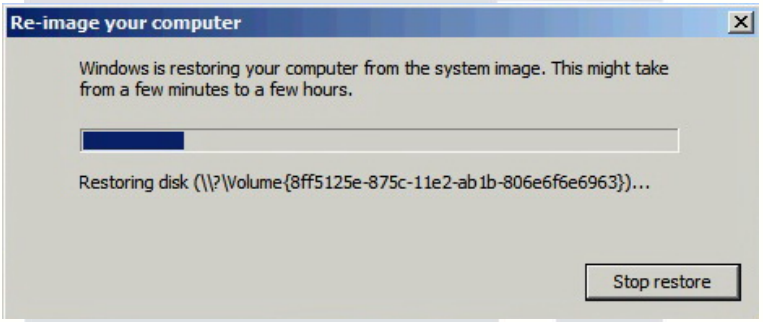
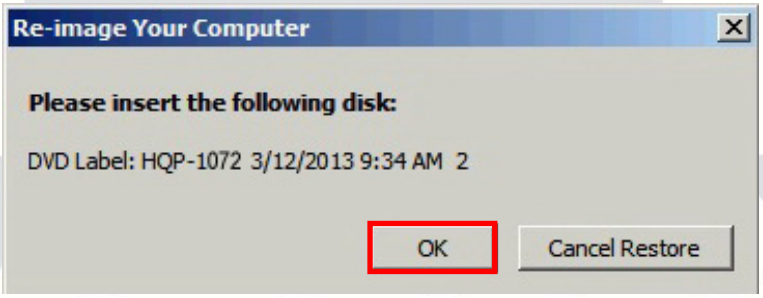
During system restoring, it will ask you to put the restore disc 1/2 into the DVD-ROM, please do it and press OK.



After put the restore disc 1/2 into the DVD-ROM, it will continue to rebuild the system.


Re-image your computer
Windows is restoring your computer from the system image. This might take from a few minutes to a few hours.
Restoring disk (\\?\Volume{8ff5125e-875c-11e2-ab1b-806e6f6e6963})...
Stop restore

The system will ask you again to put the restore disc 2/2 into the DVD-ROM, please do it and press OK.



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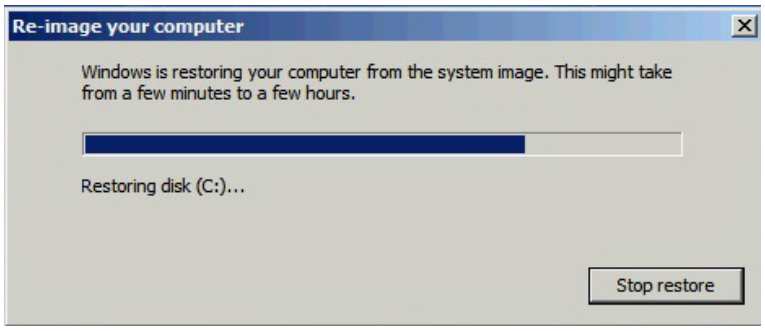
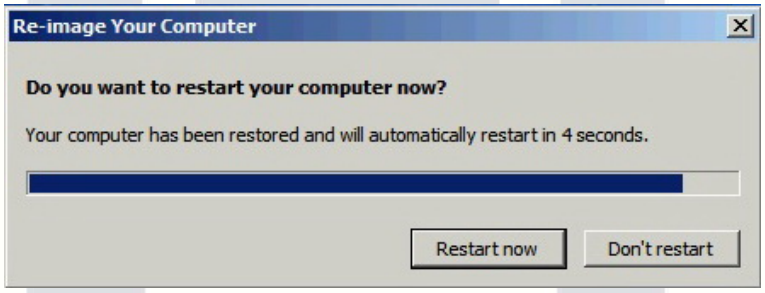
After put the restore disc 2/2 into the DVD-ROM, it will continue to rebuild the system.


Re-image your computer
Windows is restoring your computer from the system image. This might take from a few minutes to a few hours.
Restoring disk (C:)...
Stop restore

The system restoration may take about 30 minutes. While system restoration is complete, please remove the external DVD-ROM drive and restart the system. After system restoration, the system can resume its work as usual.


Re-image Your Computer
Do you want to restart your computer now?
Your computer has been restored and will automatically restart in 4 seconds.
Restart now
Don't restart

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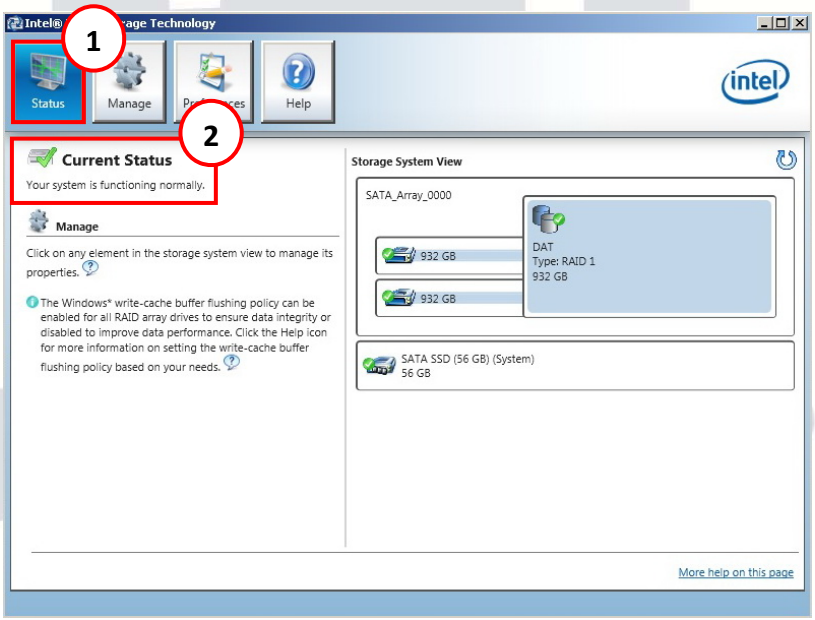
4.1.2. Data Drive Failed

HQP-1072 built-in two 1TB data hard drives mirrored as a data array. When one of these two drives fail, the system can still work normally. But It is suggested to check the status of HDD once a week.

The Intel® Rapid Storage Technology program pre-installed in HQP-1072 system can clearly depict all current status of all HDD installed in your system.

Please double click the icon to open Intel® Rapid Storage Technology to check weather the hard drives are acting normally.

If the current status shows that “Your system is functioning normally.” Then there is no need for hard drive exchange.


1
Status
Manage
Help
2
Current Status
Your system is functioning normally.
Manage
Click on any element in the storage system view to manage its properties.
The Windows* write-cache buffer flushing policy can be enabled for all RAID array drives to ensure data integrity or disabled to improve data performance. Click the Help icon for more information on setting the write-cache buffer flushing policy based on your needs.
Storage System View
SATA_Array_0000
932 GB
932 GB
DAT
Type: RAID 1
932 GB
SATA SSD (56 GB) (System)
56 GB
More help on this page

If the current status is abnormal, please go to the Manage page to gather more information of your system. The information will make it easier to solve the problem.

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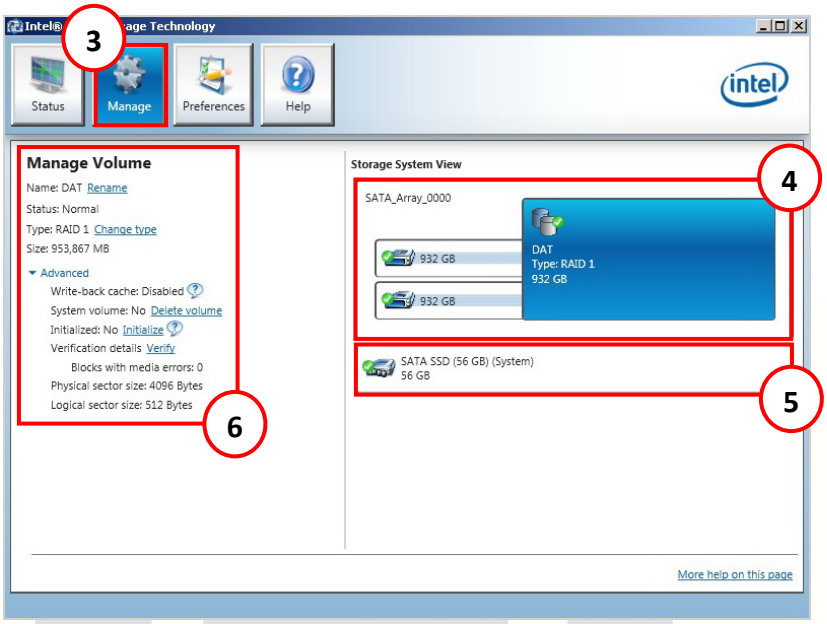
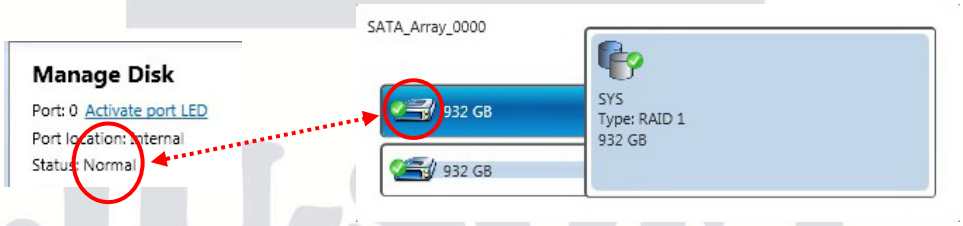
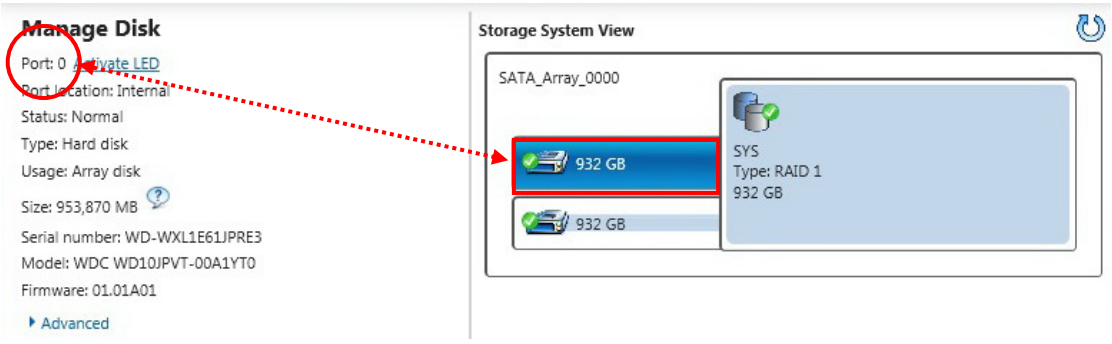
In Manage page, we can see that the system has a SATA SSD system disk(56GB) and a SATA_Array data disk (932GB).



Hard disk status may be confirmed either by the icon shown on disk or status column after selecting the disk. The green “Check” icon or “Normal” status both represent the disk selected is under normal operation. If the yellow “Exclamation” icon or “Abnormal” status is shown, it is suggested to replace the troubled disk with a backup.



In the Intel® Rapid Storage Technology program, the two disks are identified with Port 0 and Port 1.



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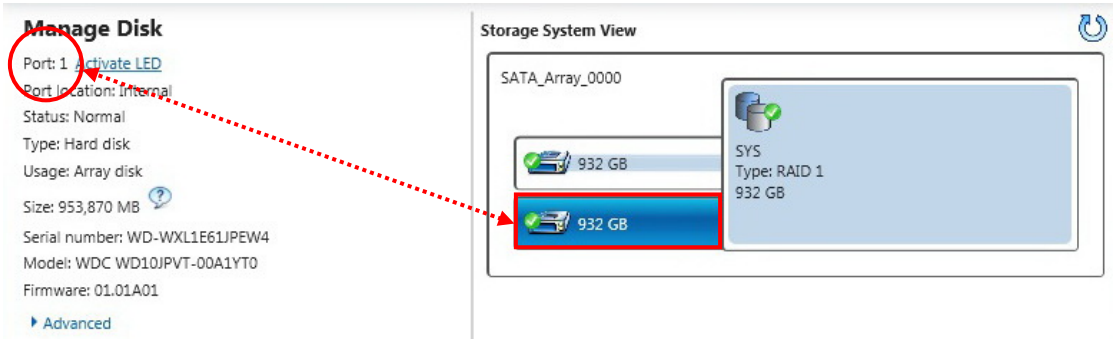
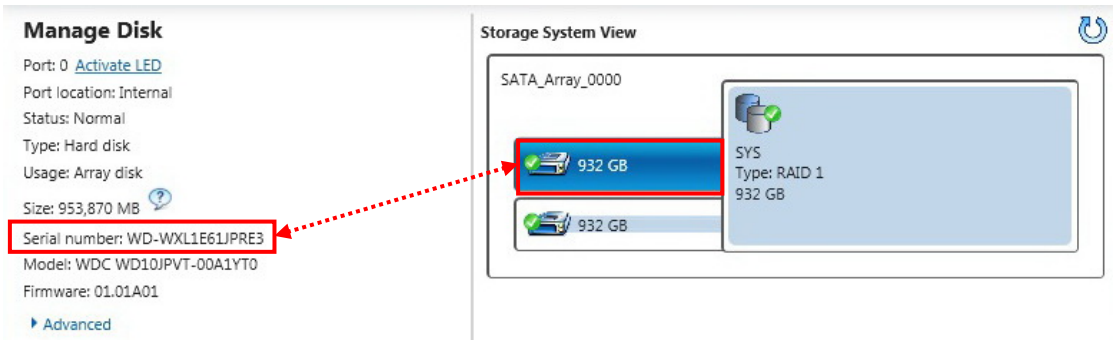


Open the chassis you will see there are two disks stacked together like the picture below. Disk0 indicate the upper disk, and Disk1 indicate the lower disk. According to these information, you can determine which disk should be replaced. If the Disk0 (Port 0) is abnormal, please replace the upper disk with backup. Otherwise, replace the lower disk (Disk1 : Port 1) with backup.

You can also get the hard disk serial number from Intel® Rapid Storage Technology program. Prudently, you can double check it with the disk you want to replace.



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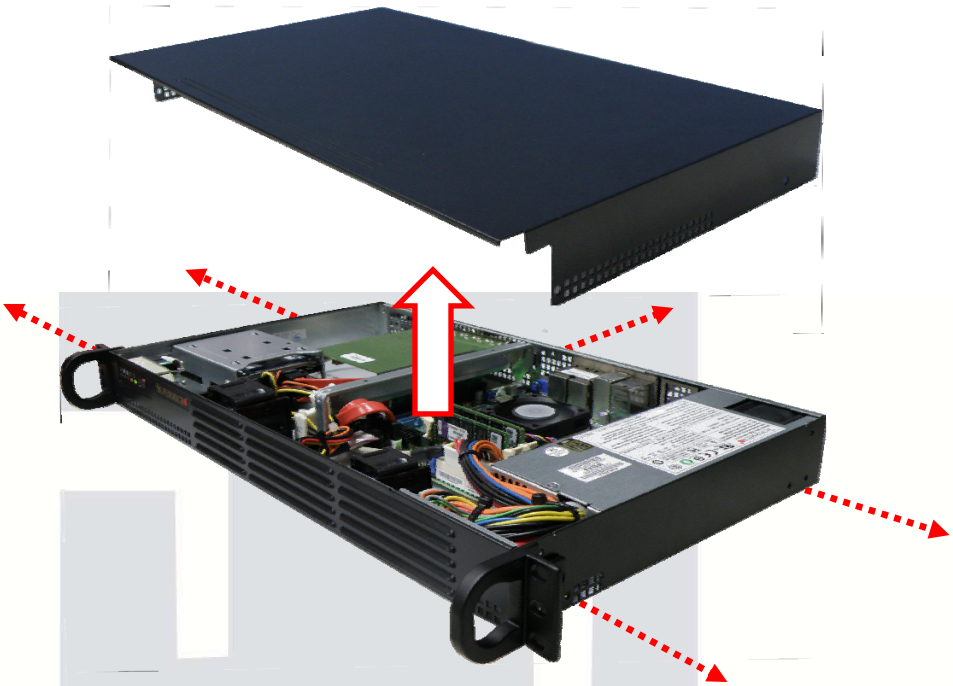
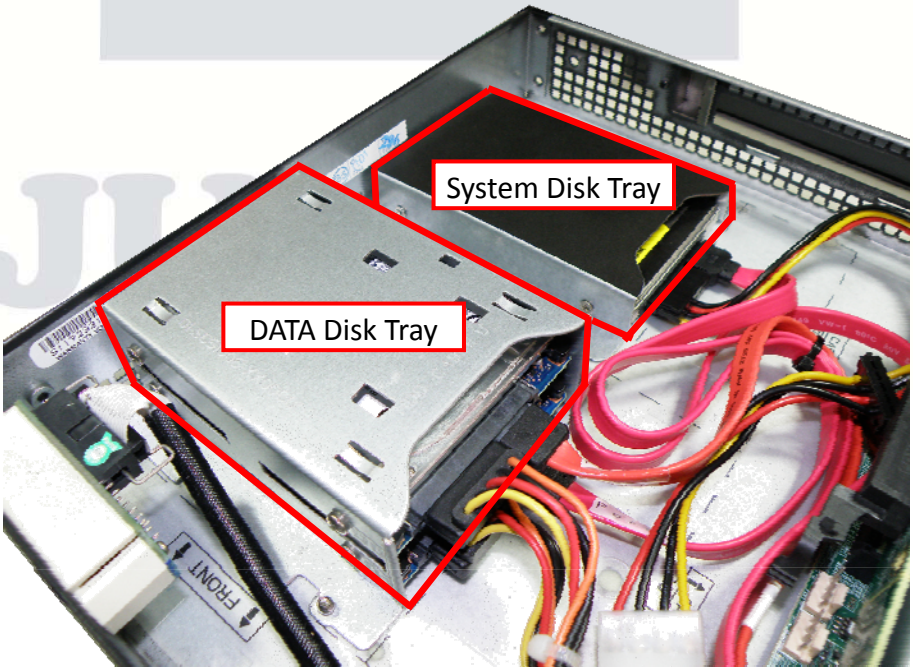
1. To replace a troubled data disk, please release these 5 screws to remove the cover of the chassis. (Rear 1, Left 2, Right 2)



2. You will see there are 2 disk trays in the chassis, one for system disk and one for data disks.



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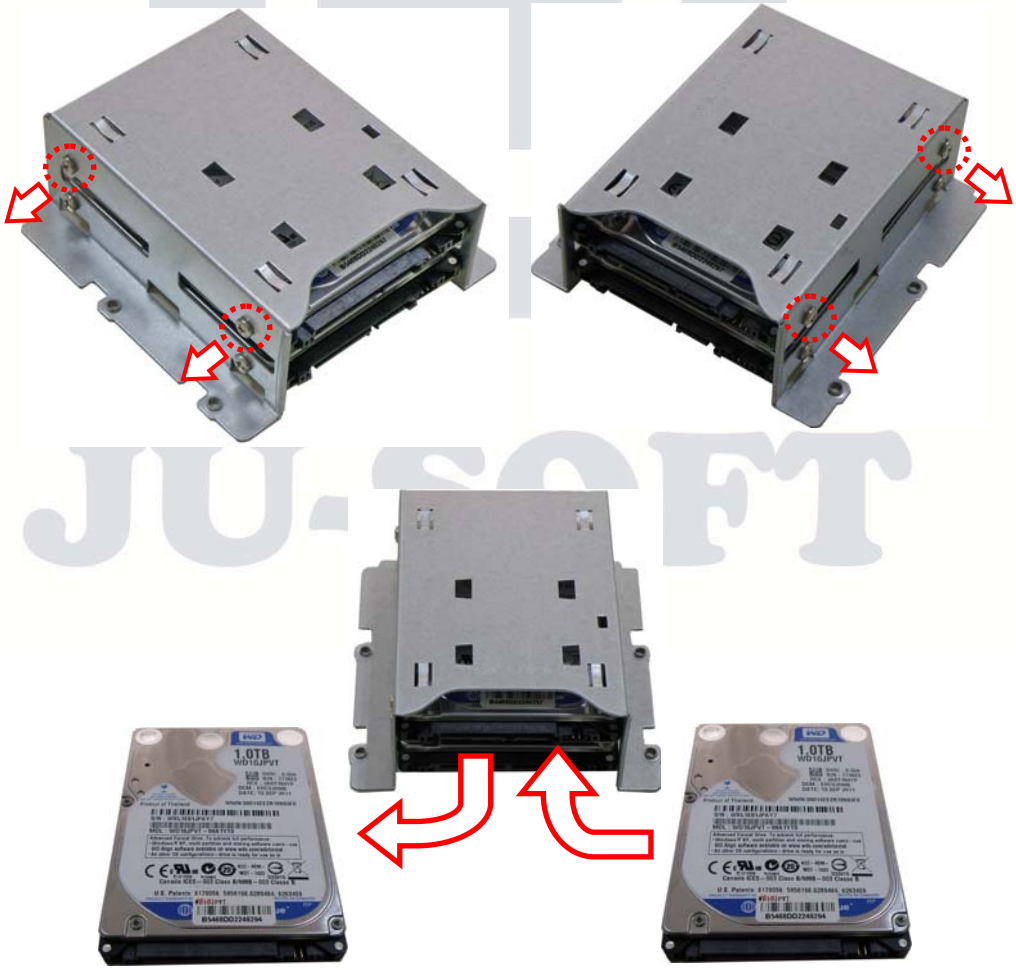
3. Release the 4 screws on the bottom of the chassis to unlock the data hard disk tray.

4. Release the 4 screws to unlock the disk and replace it with a backup. (In the picture below, we use Disk0 for example.)



Take out the troubled HDD

Replace with the backup HDD

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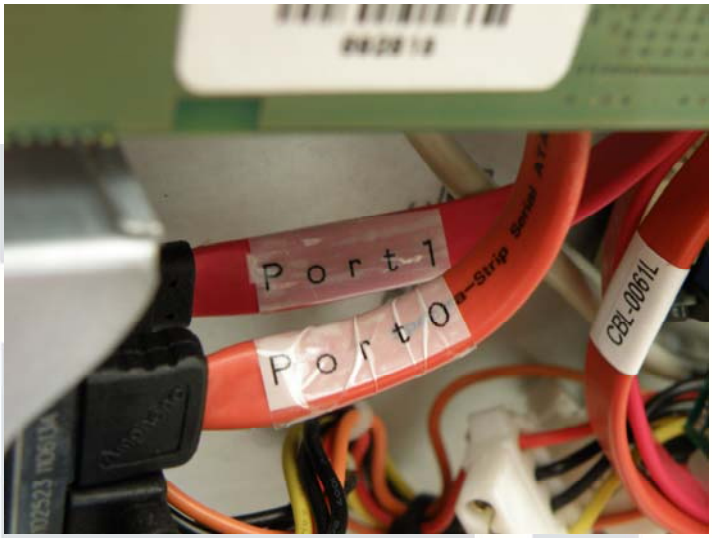
5. Reverse the steps to fasten the hard drive and hard drive tray to the chassis.

6. Connect the cables according to the picture below. (Port0 to Disk0 & Port1 to Disk1)



7. Put the cover back and fasten the 5 screws in step 1 to finish the hard disk replacing.

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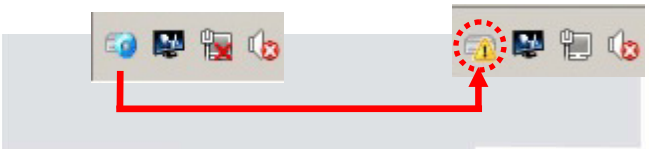
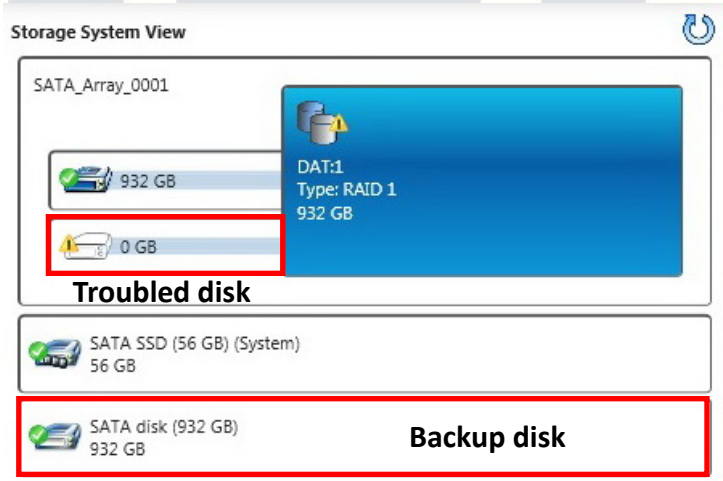
After replace the troubled data hard disk, please reconnect the system with the power cord, monitor, keyboard and mouse. Follow the step below to start system restoration.

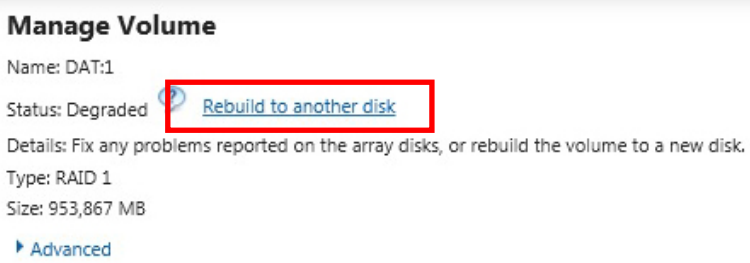
8. Power on the system and wait the Intel® Rapid Storage Technology program to launch. It takes a few minutes for IRST to gather the information of the new hard disk. When IRST is ready, please double click the icon to open IRST.



9. In IRST, there is a missing disk (the troubled disk) in SATA_Array_001 and the backup disk is shown below.



10. Please click Rebuild to another disk.


Manage Volume
Name: DAT:1
Status: Degraded
Rebuild to another disk
Details: Fix any problems reported on the array disks, or rebuild the volume to a new disk.
Type: RAID 1
Size: 953,867 MB
Advanced

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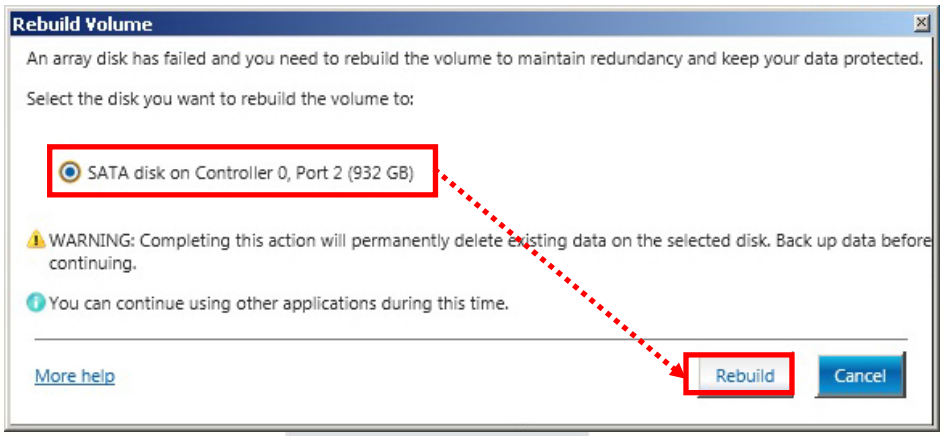
It will ask you to select a disk to rebuild the volume. Please check the back disk and press Rebuild.


Rebuild Volume
An array disk has failed and you need to rebuild the volume to maintain redundancy and keep your data protected.
Select the disk you want to rebuild the volume to:
SATA disk on Controller 0, Port 2 (932 GB)
WARNING: Completing this action will permanently delete existing data on the selected disk. Back up data before continuing.
You can continue using other applications during this time.
More help
Rebuild
Cancel

11. Waiting until the rebuild finish. (It may take probably 3 hours to rebuild a 1TB hard drive.)

12. When rebuild is completed, the system can function normally.

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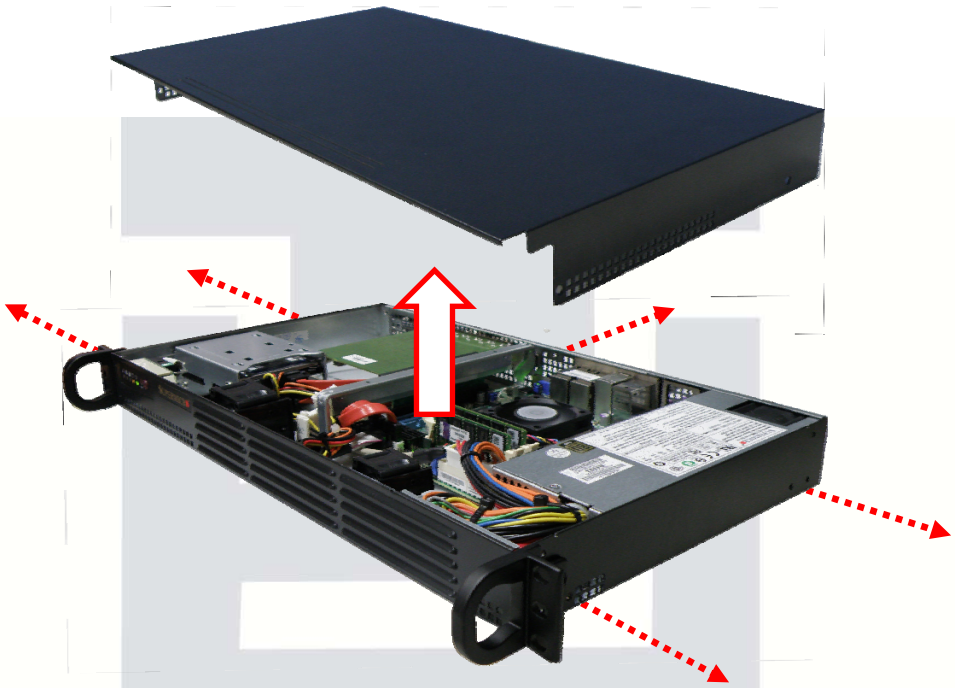
4.2 Replacing Power Supply

When power supply failed, the system will not be able to power on. Please follow the step below to replace it with a backup power supply.

1. Remove the cover of the chassis.



2. Disconnect all wiring from the bad power supply.

3. Remove the four screws which hold the power supply in the chassis. Two rear mounting screws are located on the rear of the power supply. Two bottom mounting screws are accessed on the underside of the chassis and extend upwards through the mounting thru holes, to hold the power supply in place.

Rear mounting screws

Bottom mounting screws

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4. Replace the bad power supply with a backup and screw back the 4 screws in step 3.

5. Connect all power cord and put the cover of the chassis back to finish replacing power supply.

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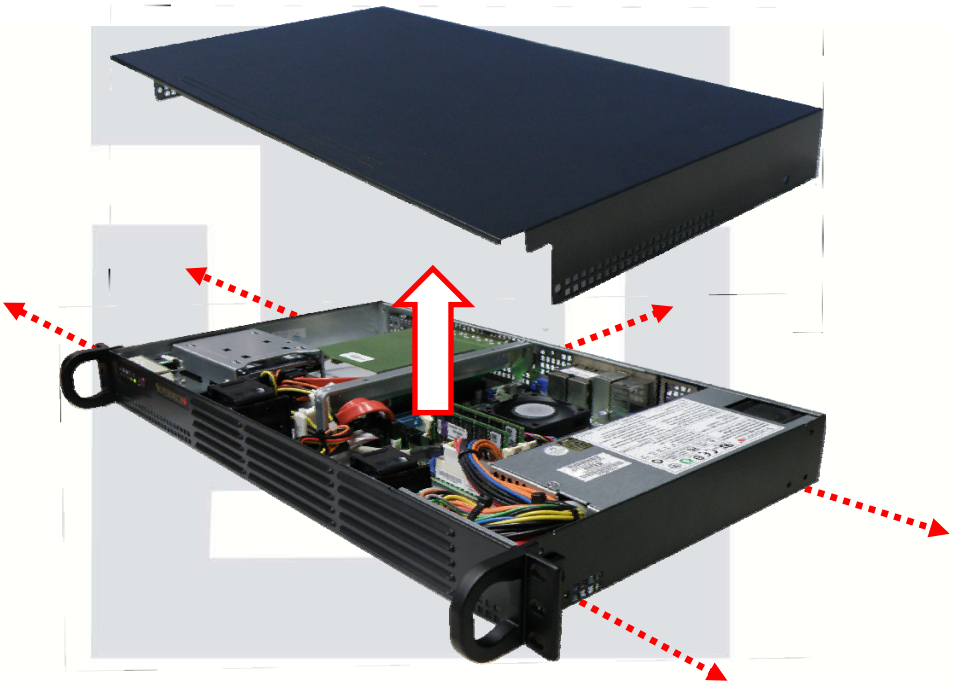
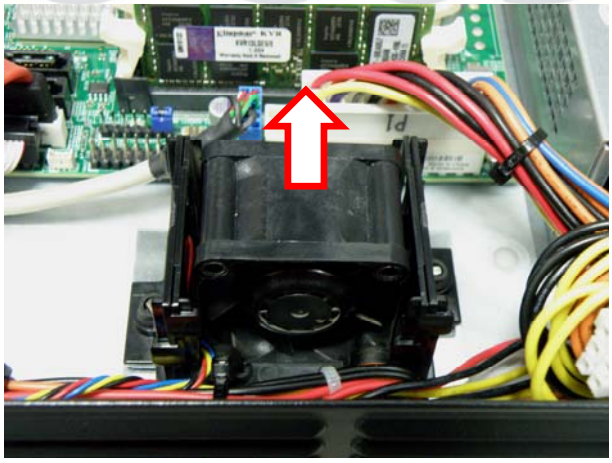
4.3 Replacing System Fan

If the system fan not work normally, the system might get overheat and crash. So, regular clean up is necessary. When system fans fail, be sure to replace them as soon as possible. The following steps will show you how to replace a system fan.

1. Open the cover of the chassis.



2. Each chassis has 2 system fan fastened on the fan housing. Please pull out the fan cable of the damage system fan and remove it from the fan housing.



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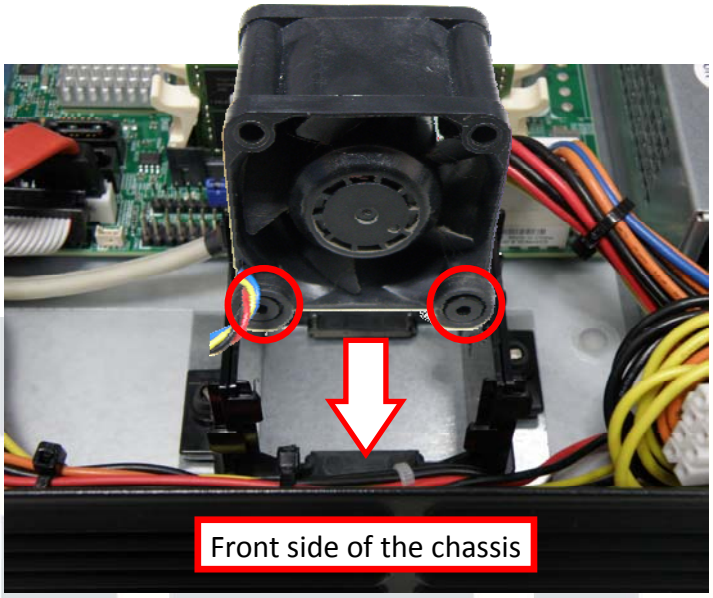
3. Take a new fan and put it into the fan housing, remember to place it in the right direction. (Check the picture below)



4. Connect the fan cables to the motherboard and put the cover back on the chassis to finish system fan replacement.

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4.4 Routine Maintenance Work

Aside from the above mentioned maintenance work, it is suggested to execute the following routine maintenance work for a better broadcast quality and ensuring that HQP-1072 System can work in long time operation.

1. Regularly Restart HQP-Series Software

It is suggested to restart HQP-Series software every week during off-peak hours. The system will release resources occupied during on-air session and then re-start working so as to enhance stability and reliability in long time broadcasting.

2. Regularly Remove out-of-date Media Files in Data Disk

It is suggested to regularly delete the less frequently used media files stored in the system—those that haven't been broadcasted recently, and so there will be enough space to store the future to-be-aired media files. Another benefit is that the efficiency of accessing hard drive can be increased.

3. Regularly Clean Dust within the Chassis

It is suggested to regularly shutdown the system for simple cleaning and checking if internal components, interface card, and the cable are well connected, which can extend life span of the system.

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5. Spare Parts

5.1 System Backup SSD

HQP-1072 System built-in a 60GB SSD (SLC) as the system disk to provide higher system efficiency and reliability. You can purchase an additional system backup SSD (mirrored from the original system disk), when there is some problem with the system disk (system crash or infect by virus), you can use it to replace the bad hard disk for system recovery. You can follow the Chapter 4.1.1 to replace the bad system disk with a backup.

60GB SSD SLC

5.2 Data Hard Disk

Data hard disk can be considered as consumables. Regularly check the health condition of hard disks is necessary.

HQP-1072 built-in two 1TB data disk to form a disk array, when one of the disks become abnormal, the system still can work normal for a period. You can follow the Chapter 4.1.2 to replace the bad data disk with a backup, and start system rebuild.

1TB Backup Data Disk

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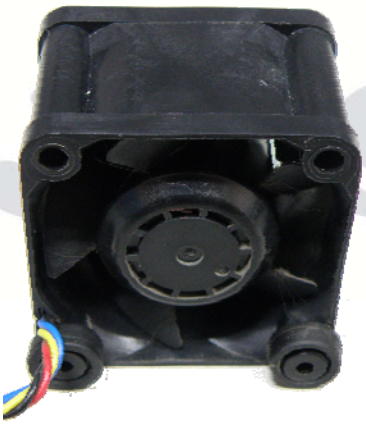
5.3 Power Supply

HQP-1072 System use one 200W high-efficiency power supplies (80 PLUS Platinum Certified). If the power supply failed, you can follow Chapter 4.2 to replace it with a backup power supply.

5.4 System Fan and Fan Housing

HQP-1072 built-in two system fans with the fan housing. The system fan & fan housing can be purchased separately. Please follow Chapter 4.3 to replace a backup system fan.



System Fan

Fan Housing

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